



City of Tacoma
Public Works Department

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WATER QUALITY
PROGRAM

March 16, 1998

Megan White
Water Quality Program Manager
Washington State Department of Ecology
PO Box 47600
Olympia WA 98504

Dear Ms. White:

This report is submitted by the City of Tacoma pursuant to Special Condition S10 of the NPDES and State Waste Discharge General Permit for stormwater discharges from municipal separate storm sewers for the South Puget Sound Water Quality Management Area. This report covers the 18-month period from July 1996 to December 1997.

Even though the City of Tacoma has not yet received approval of its Stormwater Management Program, the City has a stormwater program consisting of a variety of components. The City's stormwater program activities during the above mentioned 18-month period are described in the enclosed report.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for willful violations.

If you have any questions regarding the enclosed report, please contact Patrick Yamashita, P.E. at 253-502-2119.

Sincerely,

John D. Stetson, P.E.
Division Manager
Utility Services Engineering

H:Strandltr

Sewer Utility ■ 2201 Portland Avenue ■ Tacoma, Washington 98421-2711 ■ (253) 591-5588

City of Tacoma NPDES Annual Report

March 16, 1998

This annual report is for the reporting period July 1996 through December 1997. Normally a report would be completed for the 12 month period, July 1996 - June 1997, that matches the permit. This report covers an 18 month period, because an 18 month period will bring the future 12 month reporting period into alignment with the City of Tacoma's (City's) fiscal system, which is January - December.

1. *Status of implementing the components of the stormwater management program.*
The City is currently working with the Department of Ecology (Ecology) to gain approval of its stormwater management program (SWMP.) Since portions of the SWMP are being redrafted and the program has not yet been approved, the report does not describe the actual implementation of the components of the stormwater management program. The report does, however, describe the stormwater activities that were performed during the course of the reporting period. The report also projects some of the program components into the future as per the schedule in the draft SWMP. The format described in the permit is used for this report.

Even though the City's SWMP has not yet been approved, the City has been implementing many of the required program components on an ongoing basis. The ongoing stormwater program components include the following: data management, intergovernmental coordination, regulations for new and redevelopment projects, street and storm drainage maintenance, elimination of illicit discharges, industrial monitoring and control, and education.

S7B1 Stormwater Management Program Planning Process

The City is currently making revisions to its Stormwater Management Program.

Stormwater Utility staff worked with managers and staff from several divisions of the Public Works Department in the latter part of 1997 to compile the information needed for this report. Participation by elected officials and the public took place in 1995 and in the first half of 1996, prior to the July 12, 1996 submittal of the SWMP.

S7B2 Water Quality Problems, Needs and Priorities

Analysis of needs and priorities

The analysis of needs and priorities has been drafted and has been discussed with Ecology staff and will become part of the City's SWMP. The draft includes all of the City's unmet stormwater needs. They are prioritized as high, medium and low and a schedule is included for addressing how the high and medium priority unmet needs will be addressed during the term of the current permit.

S7B3 Legal Authority

Adoption and enforcement of ordinance containing standards equivalent to the minimum requirements of Ecology's Stormwater Management Manual

The City has existing ordinances that regulate new and redevelopment projects. The City's draft stormwater management program has scheduled a revision of these ordinances to take place in 1999 and 2000 in order to be equivalent with the minimum requirements of Ecology's Stormwater Management Manual.

Adoption and enforcement of ordinance prohibiting pollution discharges to the City's municipal stormwater system

The City has an existing ordinance that addresses the discharge of pollutants to the City's stormwater system. The City's draft stormwater management program has scheduled a modification and expansion of this ordinance in 1999 and 2000.

S7B4 Monitoring

The City's draft stormwater management program will include a revised monitoring program. The monitoring activities are scheduled for implementation in 1999 and 2000.

The City is currently doing limited stormwater monitoring. There is an official weather station at the Central Wastewater Treatment Plant and 4 rain gauges located throughout the City. The rain gauge information is recorded and used as needed. The City contracts with a weather service and receives weather reports twice a day. This information provides an early warning of heavy rains and potential flooding. Maintenance crews are dispatched to proactively check and maintain trouble spots prior to anticipated heavy rains to ensure the proper operation of the system.

Stream Team volunteers do limited stream monitoring in several streams. They monitor for pH, temperature and other parameters.

Developers are required to monitor wetlands in areas where wetlands could be impacted by development.

Storm sewer monitoring in commercial/industrial areas

This type of monitoring is not currently being done, but will be included in the revised monitoring section of the draft SWMP and will be implemented in 1999 and 2000.

Under an Administrative Order on Consent with the Environmental Protection Agency, the City of Tacoma has performed a significant amount of sampling and analysis in recent years of the storm drains entering the Thea Foss and Wheeler-Osgood Waterways. The results of sampling and modeling performed before the reporting period identified a data gap which limited the ability to complete the recontamination assessment and fully define the list of constituents of concern for the storm drain source control program. Detection limits for several undetected constituents in the stormwater were not low enough to evaluate compliance with the sediment quality objectives.

In order to address this data gap, the City of Tacoma agreed to perform additional sampling to complete the recontamination assessment. Additional whole-water sampling at Outfalls 237A and 237B was performed in July and October 1996 representing base flow and storm events, respectively. These samples were analyzed using lower detection limits. In addition, sediment traps were installed in the drainage systems for Outfalls 230, 237A and 237B between September 1996 and January 1997. This effort was performed cooperatively with staff at the Department of Ecology. Results of these sampling efforts were summarized in a Technical Memorandum dated October 29, 1997. This document was submitted to EPA for review and the City is currently awaiting approval.

S7B5 Fiscal Analysis

During the reporting period of July 1, 1996 through December 31, 1997, the stormwater utility spent \$ 17.6 million. The expenditure categories are as follows:

OPERATIONS:

Transmission

Personal Services	\$	1,058,208.07
Supplies & Other Services and Charges	\$	706,589.13
Miscellaneous Capital Outlay	\$	(100,731.16)*
Total	\$	1,664,066.04

Pumping

Personal Services	\$	90,626.05
Supplies & Other Services and Charges	\$	334,634.37
Total	\$	425,260.42

Holding Basins

Personal Services	\$	52,773.13
Supplies & Other Services and Charges	\$	(11,041.58)**
Total	\$	41,731.55

Engineering

Personal Services	\$	474,928.32
Supplies & Other Services and Charges	\$	85,718.33
Miscellaneous Capital Outlay	\$	3,000.00
Total	\$	563,646.65

Source Control

Personal Services	\$	453,510.12
Supplies & Other Services and Charges	\$	197,470.54
Total	\$	650,980.66

Laboratory		
Personal Services	\$	36,247.26
Supplies & Other Services and Charges	\$	18,359.87
Miscellaneous Capital Outlay	\$	41,332.06
Total	\$	95,939.19

MISCELLANEOUS:

General Services		
Personal Services	\$	580,950.18
Supplies & Other Services and Charges	\$	5,037,522.51
Miscellaneous Capital Outlay	\$	47,837.85
Debt Service	\$	952.00
Total	\$	5,667,262.54

Debt Service		
Principal and Interest	\$	3,152,501.48
Other	\$	106,082.90
Total	\$	3,258,584.38

Other Department Divisions not included above:

Miscellaneous unknown at this time

Capital Projects:

T-Street Gulch	\$	967,123.83
Coal Gasification Cleanup	\$	92,582.12
Hosmer Basin	\$	91,181.05
Foss Waterway Cleanup	\$	2,164,297.61
NE Tacoma System	\$	934,198.74
NRDA	\$	208,036.31
Misc. Superfund	\$	885.44
Miscellaneous	\$	790,833.44
Total	\$	5,249,138.54

Notes:

- * Accounting adjustment which reflects a credit from LID payment timing.
- ** Accounting adjustment which reflects moving the timing of a payment to USGS to a different time period.

A description of the types of activities associated with the above expenditures is contained in Volume 3 of Tacoma's Stormwater Management Manual. Relating the budget amount in each of the above categories to the actual expenditures is very difficult

at this time. First, this reporting period not only starts in mid year (July 1996), but it also crosses into two different budget bienniums. Secondly, some activities are budgeted in one activity or organization but are actually spent and therefore charged to a different activity or organization. As a result, the actual expenditure in any one line item does not necessarily relate to the budget number for that same category. And thirdly, some capital expenditures may be budgeted in the operating budget but the expenditure is taken from the capital budget and vice versa.

The expected revenue from rates in 1998 is \$ 13.2 Million. The anticipated expenditures for the 1998 year will likely be greater than in 1997. This is due to increasing activities in the Stormwater Utility. There will be increased emphasis on source control, public education, and on revising the stormwater manual as required by the Department of Ecology. In addition, there are numerous planning, design and construction activities funded by the Utility. Some of these are to comply with Federal and/or state orders, consent decrees, mandates, etc.

S7B6 Data Management

Development of land cover information maps and data

A GIS mapping system has been in use for the past several years. A source control data base for industrial and commercial sites has been developed. It tracks business inspections and compliance status.

Description and location of major structural BMPs and other structural controls

The City is currently developing a map that will show the location and type of all public and private water quality and water quantity facilities.

Mapping storm sewer outfalls and tributary conveyances

This type of mapping is complete and has been available for many years.

Water quality complaint investigations and data base development and maintenance

A customer request data base is currently being developed for residential requests. A separate business data base is currently in use.

S7B7 Intergovernmental Coordination

General coordination for monitoring, mapping, data management and modeling

The City coordinates a variety of activities with other municipalities and agencies. Issues related to the Flett drainage basin are coordinated with Pierce County, Lakewood and the Washington State Department of Transportation (WSDOT). Activities related to the ASARCO site are coordinated with the City of Ruston, Metro Parks Tacoma and the United States Environmental Protection Agency (EPA). Issues related to the clean up of the Foss Waterway are coordinated with WSDOT, EPA, the Army Corps of Engineers, the Washington State Department of Natural Resources, the Puyallup Tribe and Ecology. Activities related to the T-Street drainage basin are coordinated with Pierce County. Activities related to the Leach Creek drainage basin are coordinated with WSDOT and

the cities of University Place and Fircrest. Activities in NE Tacoma, including the Joe's Creek drainage basin, are coordinated with Federal Way.

General coordination for control of stormwater pollution from other jurisdictions

The City coordinates with other jurisdictions and agencies in a variety of ways. The City participates in the NPDES municipal permittees group, the Puyallup River Watershed Council and the APWA Stormwater Managers' Meetings. Funds are provided to the Pierce County Conservation District to support the Stream Team. A variety of stormwater educational events are coordinated with Metro Parks Tacoma and with other jurisdictions such as Bellevue and Seattle.

Development of coordinated SWMPs for waterbodies shared with other municipal permittees

The SWMP will include a description of mechanisms to address stormwater concerns in shared waterbodies.

S7B8a Runoff from new development and redevelopment

Development of ordinance containing minimum technical requirements equivalent to Ecology's manual

A draft manual has been written and was submitted to Ecology in 1995 for comments. The draft SWMP includes a schedule to enhance the City's erosion and sediment control efforts beginning in 1998, to complete the equivalency document in 1999 and to finalize the manual and provide training for manual implementation in 1999 and 2000.

Stormwater plans for all new development and redevelopment projects are being reviewed and then the projects are inspected in the field. Many aspects of the draft manual, including the detention release rates are being implemented in this process.

Staff provide consultations and educational meetings with developers, planners and engineers involved in the land development process.

The Building and Land Use Services Division of the Public Works Department distributes NPDES Construction Notice of Intent forms to all developers who have projects that will include 5 acres or more of land clearing activities. These projects require a separate NPDES permit from Ecology.

S7B8b Existing Residential and Commercial Development Runoff

Drainage channel stabilization improvements were made in the mostly residential T-Street drainage basin to mitigate ongoing erosion and sediment control problems. Improvements were also made to reduce peak flows in Joe's Creek, thereby reducing erosion, sedimentation and flooding problems. These improvements included a two-cell wet detention pond and 2 wet ponds within the Northshore Golf Course. One of the ponds is also used for irrigation of the golf course.

The City's stormwater Source Control staff inspect existing commercial and industrial sites for compliance with applicable stormwater regulations. Problems are identified and are corrected. The corrections can include the addition of structural or non-structural BMPs necessary to solve the problem.

S7B8c Municipal Storm Sewer Operation and Maintenance

The Public Works Department has a Sewer Maintenance Division that maintains both the storm drainage and the sanitary sewer systems. The following tables indicate the level of maintenance efforts that were completed during the reporting periods.

JULY, 1996 - JUNE, 1997

# CBs cleaned	5,204
# CBs checked	1,025
Ditches cleaned	118 blocks
# Culverts cleaned	665
# Scuppers cleaned	9
Main Storm lines cleaned	47 blocks
Main Storm lines backcut	53 blocks
#Storm Manholes cleaned	124
#Storm Manholes checked	104
#of TV Inspections	64

JULY, 1997 - DECEMBER, 1997

#CBs cleaned	2,952
#CBs checked	1,843
Ditches cleaned	377 blocks
#Culverts cleaned	367
#Scuppers cleaned	34
Main storm lines cleaned	68 blocks
Main storm lines backcut	20 blocks
#Storm Manholes cleaned	101
#Storm Manholes checked	73
# Feet In-house TV	16,875
# Feet Pay TV	9,295

Development and implementation of an ordinance defining private storm sewer system maintenance responsibilities is scheduled in the draft SWMP to take place in 1999 and 2001 along with the other legal requirements.

Vactor waste is currently being decanted. The dry material is used at the landfill as daily cover. The liquid waste is being discharged to the sanitary sewer. Testing of both the dry and liquid components is currently being done.

An additional 3 vactor trucks were purchased and are in use.

S7B8d City Road Operation and Maintenance

The Public Works Department has a Street Maintenance Division that maintains the City's streets. The City operates 4 street sweepers. Over the last 18 months, 37,500 miles of street were swept and 8,250 cubic yards of material were collected.

S7B8e Water Quality Considerations in Flood Management Projects

A flood management project was constructed in the T-Street drainage basin to reduce erosion and sediment problems. Another project was constructed to reduce flooding, erosion and sediment problems in Joe's Creek. Part of the project included a two-celled wet detention pond and 2 water quality wet ponds on the Northshore Golf Course. A large residential plat also added 3 water quality wet ponds as part of their stormwater system.

S7B8f Runoff from Pesticide and Fertilizer Application

Two major educational efforts focused on this area. A utility bill insert on the proper use of fertilizers and pesticides was distributed to all residents in the City. An advertisement on the proper use of yard chemicals was shown on TV and used in print ads. Posters and flyers showing this same information were distributed to schools, libraries, community centers and environmental groups. An educational interview was done by staff on the City's cable TV station. The interview emphasized what citizens could do to protect water quality, including the proper use of pesticides and fertilizers.

S7B8g Illicit Storm Sewer Discharge Elimination

The elimination of illegal discharges is the City's top stormwater priority. The City currently has a ordinance that is used to enforce the elimination of illicit discharges. This ordinance will be revised and updated in 1999 and 2000 when the City plans to update its drainage ordinance to meet the new requirements.

The City has two full time staff people devoted to the stormwater program and the elimination of illicit discharges. When they do business inspections, they provide the business operators with technical assistance regarding the elimination of illicit discharges and they educate business operators about the proper BMPs to use. Volume II of the City's Stormwater Management Manual, "A Guide to Best Management Practices for Industries, Businesses and Homeowners", is used in the industrial stormwater program for guidance in the storage and containment of chemicals.

The field staff observe or assist emergency response agencies with spill response activities. They provide the agencies with information on the City's stormwater system with the goal of keeping the spilled material out of the system. They have worked with

mobile washers and charity car wash operators to ensure that these types of washing activities are done correctly. They have also started working with the Tacoma Fire Department and with other City facilities to ensure that vehicle wash water is disposed properly. The field staff also responds to general concerns regarding water quality problems.

The City also has a large new household hazardous waste disposal and recycling center located at the landfill. This facility provides a place for the community to safely dispose of waste products that otherwise might end up in a storm drain.

S7B8h Industrial Stormwater Monitoring and Control

The City reviews all commercial plans for adequacy of the private storm sewer systems and their connection to the City's system. New construction is inspected to ensure compliance with City requirements.

The City's two stormwater Source Control staff inspect industrial sites. The industrial inspections are coordinated with Ecology staff as appropriate. This coordination includes the referral of problem sites to Ecology when the industry has an industrial NPDES permit.

The staff members have developed an inventory of sites and have the inventory on a computerized data base.

S7B8i Stormwater Education

Employee Education:

The City encourages its stormwater staff to participate in continuing education. The staff has attended classes on monitoring, implementation of BMPs, innovative BMPs, public relations, education, water quantity and other topics directly related to stormwater. City staff also participates in the APWA Stormwater Managers' Meetings, the NPDES Municipal Permittees Work Group and the Puyallup River Watershed Council. All of these provide opportunities for additional stormwater education.

Public Education:

The City has an extensive public educational program. The Stream Team, a multi-jurisdictional effort, sponsors storm drain stenciling. They also offer other programs such as wetland and stream bank clean ups and revegetation, workshops and tours. The Stream Team also has a water quality booth that is used at various community events including the Puyallup Fair and Maritime Fest. The Stream Team was awarded a Quarterly Preserve Planet Earth Award from Rotary Club #8 of Tacoma. They also received the 1997 "Earth Team of the Year" award from the Washington Association of Conservation Districts and the United States Department of Agriculture Natural Resources Conservation Service.

General stormwater educational topics such as car washing, use of yard chemicals, auto maintenance and stream team activities were described in two utility bill inserts. New

programs such as charity car washing, Nature Bowl and general stormwater education were discussed on the City's cable TV program, CityLine. The charity car wash program also received radio and newspaper coverage. The Nature Bowl program is a multi-jurisdictional effort to provide water quality information to grade school children and their teachers. The Stormwater Utility participated in another multi-jurisdictional educational effort to provide print and TV ads related to stormwater quality education. These efforts again focused on things that the community could do to protect water quality such as car washing, auto maintenance, pet waste disposal and use of yard chemicals. The ads were used on TV and in the newspapers. The posters were also distributed to all of the grade schools, libraries and community centers in the City and to environmental groups.

The Stormwater Utility, Sewer Utility, Solid Waste Utility and Tacoma Public Utilities have cooperated in a 5 year effort with the Tacoma School District to provide environmental education in the schools. The Utilities have paid the salary of a Curriculum Facilitator for Environmental Education. The Facilitator has developed an environmental curriculum for the schools.

The Stormwater Utility helps to sponsor the Nature Bowl program offered at the Nature Center at Snake Lake by various agencies. This provides an opportunity for educational interaction with both teachers and school kids with respect to water quality concerns.

The Stormwater Utility has submitted a Public Involvement and Education (PIE) grant application to the Puget Sound Water Quality Action Team. Metro Parks and the Tacoma School District were among many sponsors of the grant. The funding, if received, will support a variety of educational efforts that will focus on stormwater and marine life. Most of the activities will take place at the Point Defiance Zoo and Aquarium.

The City's Solid Waste Utility has an active educational program related to recycling activities and the new recycling center.

The Stormwater Utility staff also participated in a variety of other educational activities such as meeting with high school students, assisting with the water quality booth at the Puyallup Fair, and doing water quality presentations for students from the University of Washington Tacoma and for a teacher inservice day. Numerous presentations were also made related to the water quality activities on the Foss Waterway.

S12 Thea Foss Waterway Basin Program

The City's NPDES municipal stormwater permit, issued in 1995, contained a special provision requiring the development of a stormwater program specific to the Foss Waterway. Much of the work to establish the program was done in 1995 and early 1996, prior to this reporting period. This included the identification and prioritization of both drainage basins and the businesses that would need inspections. Most of the business inspections were completed during the 18 month of this reporting period. The business inspections included: checking for illicit discharges, ensuring proper storage and

maintenance activities, providing technical support and education regarding use of BMPs and sampling on-site and downstream as necessary. Follow-up inspections were performed and enforcement actions were taken as necessary. The inspections were documented and the information was input into a data base.

One hundred and fifty five (155) full business inspections were completed during the 18 month reporting period. 140 additional drive-by inspections and approximately 30 follow-up inspections were also completed.

2. *Notification of any recent or proposed annexations or incorporations*

No areas were annexed during the reporting period for this report.

3. *Differences between planned and actual expenditures*

Relating the planned expenditures in each of the above categories to the actual expenditures is very difficult at this time. First, the City's budget and fiscal tracking systems are not structured to fit the NPDES needs. They were developed to comply with the State Auditor requirements and conform to the Government Accounting Procedures (GAP). Second, this reporting period not only starts in mid year (July 1996), but it also crosses into two different budget bienniums. Thirdly, some activities are budgeted in one activity or organization but are actually spent and therefore charged to a different activity or organization. As a result, the actual expenditure in any one line item does not necessarily relate to the budget number for that same category. And finally, some capital expenditures may be budgeted in the operating budget but the expenditure is taken from the capital budget and vice versa. We will work with the budget and fiscal offices to see if modifications can be made to eliminate these anomalies.

4. *Revisions, if necessary, to the remaining years of the fiscal analysis reported in the approved stormwater management program.*

This doesn't apply since the City's stormwater management program hasn't been approved.

5. *For the fourth year report, a summary and analysis of the cumulative monitoring data collected throughout the term of the permit.*

Not applicable for this report.

6. *A summary describing compliance activities, including the nature and number of official enforcement actions, inspections and types of public education activities.*

During this reporting period, the City's Stormwater Utility received approximately 300 stormwater calls relating to water quantity and flooding concerns. Approximately 1 call per week is received regarding water quality concerns including spill response. Most of the complaints are neighbors complaining about storage or disposal issues and some are from citizens reporting the same type of issues about businesses. Some of the complaints come from other agencies or City departments.

The Stormwater Utility is currently improving its tracking system for customer service requests relating to water quality and water quantity concerns. The improvements will include a new data base. The next annual permit will provide more accurate information related to customer service requests.

The Building and Land Use Services Division of Public Works enforces the grading (erosion and sediment control), critical areas and shoreline management ordinances. They had approximately 30 enforcement actions relating to erosion and sediment control, 2 wetland enforcement actions and 1 shoreline enforcement action during this reporting period

Please refer back to S7B8i for information on public education activities.

7. *Identification of known water quality improvements or degradation.*

The City's stormwater Source Control staff worked on two separate projects that resulted in water quality improvements. They discovered that a National Guard Armory oil storage tank was leaking oil into the City's stormwater system. They took immediate action and resolved the problem thereby having a direct improvement on water quality. They also identified that several business involved in the plastics industry were responsible for BEP getting into the Foss Waterway. They made numerous business inspections and worked cooperatively with staff from Ecology in order to take appropriate enforcement actions. The cooperative efforts were effective and the discharges of BEP into the City's stormwater system have been reduced. This has also improved water quality.

8. *Status of watershed-wide coordination and activities which the permittee has undertaken individually or jointly as part of Special Condition S7B7.*

Please refer back to S7B7 for information on watershed-wide coordination and activities.

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